

THE KASHMIR TERMITE,  
*TERMOPSIS WROUGHTONI*.

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It will be remembered that in Vol. XV (1904) of the Society's Journal, page 445, I gave a brief description of a new Termite from Kashmir, *Termopsis Wroughtoni*, the first Asiatic representative of the genus *Termopsis*.

As I then said, the few specimens received from Mr. Wroughton were damaged when they reached me, and it was not possible therefore to give from them a complete and precise description.

However, through the kindness of Mr. E. Radcliffe, of the Forest Service, who has procured me fresh material of the Termite in question, I am now able to describe it thoroughly.

Although I am preparing a monographic work upon the whole family of Termitidæ, I think it necessary to give here a full description of the Himalayan *Termopsis*, as there are many details of structure which could not be mentioned in the preliminary paper, and also as the latter includes some erroneous statements owing to the bad state of preservation of the specimens first examined by me.

The genus *Termopsis* (Heer) is characterized as follows:—

*Imago* with antennæ of 27-28 segments; ocelli totally absent; epistoma not prominent; pronotum nearly flat, narrower than the head; tibiæ with lateral spines; tarsi of peculiar structure: of four completely distinct joints, but in reality of five joints, of which the 2nd is but partly distinct from the first (see Fig. 3); a plantula between the claws of the tarsi; cerci long, of 8-5 joints; styli present in the male, well developed; wings large, less than four times as long as broad;\* subcosta present in the front wings; radius strongly developed, with several branches to the costal border; media running about the middle of the wing; † the membrana occupied by reticulated nervures.

*Soldier*, very robust, with large, rectangular, flat head. Eyes present and small, or rudimentary. Antennæ of more than 20 segments.

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\* The length of the wing being that of the membranous portion (not including the stamp.)

† The terminology of the wing-venation here employed is that of Comstock and Needham now quite generalized. In my preliminary description of the *Termopsis* I made use of Hagen's old names of the veins, I must thus give here their equivalents: *costal border*=Costa of Hagen, *radius*=subcosta id., *media*=Mediana id., *cubitus*=Submediana id. The true *subcosta* was not considered by Hagen as one of the principal veins in the Termites.

Mandibles very strong, their inner margin furnished with teeth. Pronotum narrower than the head, nearly flat. Cerci and styli are long or even very long.

The *workers* appear to be larval in shape.

In all castes the tarsi are of the same structure, but a plantula is present in the Imago only.

The genus *Termopsis* was established by Heer in 1849 for the reception of several fossil species from the amber of Oeningen (Prussia). In 1856, Hagen restricted Heer's genus by showing that several of his species had to be placed in *Hodotermes*, and in 1858, in the descriptive part of his Monograph of the Termites, he described the first *living* species, *Termopsis angusticollis*, from California. At the same time Hagen also placed in this genus, although in doubt, a peculiar soldier from Central America formerly described by Walker under the name *Termes occidentis*. I am, however, convinced that this does not really belong to *Termopsis*, a question which can be ultimately confirmed by the discovery of the winged form.

It was therefore a matter of the greatest interest to me to see that there was also a living *Termopsis* in the Indian Region, and I was most astonished that such a large and peculiar "white ant" had remained so long unknown.

*Termopsis Wroughtoni*, Desneux, Journal, Bombay Nat. Hist. Soc. XV, 1904, p. 445.

= *Termopsis Radcliffei*, E. Radcliffe, Indian Forester, 1904, p. 412.

*Winged Imago*.—Length of the body about 11 millimetres, to the tip of the wings 25 mm.

Head large, rounded, the upperside nearly flat, sometimes with the centre very slightly depressed, rather dark reddish-brown, darker in front; the Y-suture distinct.

Antennæ long, longer than the head and pronotum, of 24 or 25 segments; the 1st segment large, cylindrical; the 2nd smaller than the 1st but always longer than the 3rd; the 3rd to 5th segments variable in length: in some cases the 3rd is but little shorter than the 2nd, in others it is much shorter, being broader than long; the 4th is either subequal to the 5th or longer, or shorter; the segments beyond the 5th are more or less conical, differing but little in length, becoming more slender towards the apex of the antenna.

Eyes very large but not very prominent, close to the base of the antennæ, of quite unusual form amongst the Termitidæ: the anterior border being broadly emarginated so that the eye appears to be almost *reniform* (Fig. 1).



Fig. 1.—*Termopsis Wroughtoni*, side view of Imago's head. Ocelli wholly absent.

Pronotum narrower than the head, nearly flat, the antero-lateral angles somewhat depressed with the border raised; nearly trapezoidal in form, narrowed behind; anterior margin nearly straight, very slightly emarginated in the middle, the sides slightly curved, the posterior angles obtuse, the posterior margin nearly straight, obscurely concave. The pronotum is reddish-brown, not so dark as the head.

Meso- and metanotum paler than either the pronotum or the abdomen, yellowish; broad, the posterior margins but little concave, nearly straight. Anterior wing-stumps much larger than the posterior but not overlapping them and even not reaching their base;\* the border nearly straight. Wings large, less than 4 times as long as broad, the membrana almost uncoloured, slightly yellowish. The following description of the veins applies to the *anterior* wings: costal border nearly straight becoming curved towards the apex; subcosta present but short, unbranched, very close to the costal border which it reaches at some distance from the end of the stump; radius strongly developed, emitting two long branches from the stump, the first one reaching the costal border before the middle, the second beyond the middle; the radius emits further about 7 oblique branches towards the costal border in its apical half, the end ones anastomosing.

While the radial veins are strong and coloured yellow, the remaining veins are faint and uncoloured.

Media slightly concave, the greatest distance between it and the radius being about the middle; it divides generally in its second half (sometimes, however, before the middle), emitting 5 or 6 principal branches to the posterior border.

Cubitus reaching beyond the middle of the posterior border, emitting 10 or 11 oblique branches, mostly unbranched, the 5 or 6 first ones very close one to the other, the others more distant.

\* In dried, shrivelled specimens, the anterior wing stumps may seem to reach the base of the posterior ones, but this is not the case in well-preserved specimens, nor consequently in the living ones.

The membrane of the wing occupied by a fine, distinct reticulation.

Length of anterior wing (without the stump) 20 millimetres, breadth of the same, 5·8 mm.

Legs of moderate size; femora broad; tibiæ with distinct lateral spines; tarsi of the typical generic structure, with a plantula between the claws.

Abdomen yellowish-brown.

Cerci very long, much longer than in any other known termite, of 7 or 8 segments, the last segment often a little longer than the two preceding ones together. The styli of the male are also the longest known, unsegmented, longer than (or at least as long as) the last segment of the cerci.

*Soldier*.—Length with mandibles 17-20 millimetres.

Head large and robust, depressed, flat, somewhat longer than broad, nearly rectangular, the sides being nearly straight and very slightly converging anteriorly; reddish brown, darker in front, this darker

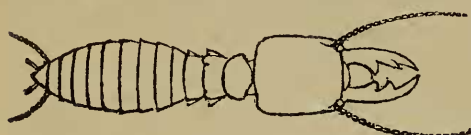


Fig. 2.—*Termopsis Wroughtoni*. Soldier (enlarged).

anterior portion of the head being limited by the diverging branches of the Y suture. The posterior border of the head is distinctly sinuate as shown in figure 2.

The eyes are present, black, small, ovate, not at all prominent and without facetæ. These eyes, though well distinct, are of course at a notably reduced stage.

Antennæ long, of 23 or 25 segments (sometimes 22); the basilar segment is large; the 2nd a little longer than the 3rd, which is shorter than the 4th; the 5 following ones about increasing a little in size towards the apex; those beyond becoming more slender towards the apex.

Labrum of moderate size, a little longer than broad.

Mandibles extremely robust, a little (in some cases very little) shorter than the head, black with the base often slightly reddish, the inner margin of both the right and the left with very strong teeth of peculiar irregular outline; the mandibles are nearly straight, with the tip incurved and acute.

Length of the head with mandibles 7·95 mm.; mandibles alone 3·6—4·5 mm.

Pronotum narrower than the head, nearly flat, the anterior margin irregularly convex, the postero-lateral margins converging, the posterior margin nearly straight. Meso- and metanotum as broad as the pronotum, their posterior margins subconvex; metanotum shorter than the mesonotum which is almost as long as the pronotum. The mesothoracic and metathoracic epimera have the peculiar form of triangular appendices, externally free, prominent lobes. These I erroneously described in my former paper as wing rudiments, and, in fact, in the shrivelled specimens I had then under the eyes they quite looked like small alar lobes of the meso- and metanotum, but in well preserved specimens it is at once evident that they are lateral pieces of the thorax,



Fig. 3.—*Termopsis Wroughtoni*.  
Tarsus of a Soldier (much enlarged).

peculiarly modified epimera. Legs robust, femora broad; tibiae with distinct lateral spines, tarsi without plantulae. Abdomen rather long, yellowish grey.

The cerci are slender and of very great length, nearly as long as the tibiae of the intermediate legs (sometimes a little longer, sometimes a little shorter) consisting of 6 or 7 long segments, the last one the longest. In some cases the cerci appear to have 5 segments only, but there are then always traces of a division of the first one.

Styli very large, longer than the last segment of the cerci.

Amongst the specimens collected by Mr. Radcliffe, there are numerous nymphs 11 mm. long, with more or less developed wing buds, and also a number of specimens similar in shape to the nymphs, 10-11 mm. long, with distinct scars at the posterior borders of the meso- and metanotum, as if the wing buds had been broken there. These individuals are perhaps used as workers; their head is a little larger than that of the nymphs.

All nymphal individuals have the peculiar lobed epimera at the meso- and metathorax like the soldiers, but not the winged Imago.

There can be no doubt that this species really belongs to the genus in which I have placed him, all the important characters are typical; but on account of several peculiarities (form of the eyes in the Imago, wing-stumps, etc.) I have recently established for him a distinct subgenus, *Archotermopsis* (see Desneux, *Termitidae* in "Genera Insectorum," XXV, 1904, p. 13.)

*Habitat.*—Kashmir Valley.